BY BETH AZAR

Finding any real "personality" genes is decades away. But researchers have a good start.

In fact, more researchers are jumping into the complex fray of behavioral genetics each year, fueled by the hope that identifying genes related to personality traits will not only help them better understand what makes people tick but also what goes wrong when normal "ticking" turns pathological.

The goal is to discover genes that affect brain functions that in turn affect how people interact with their environments. The research is slowed by the complexity of the search: Many genes are responsible for various aspects of people's temperament, and those genes appear to interact with each other in complicated ways that influence several traits at once—and then likely only in very subtle ways, with any one gene likely accounting for only 1 or 2 percent of the variance in a trait.

Researchers do, however, believe that their work will eventually pay off and they'll have a new, more comprehensive, understanding of personality and psychopathology as well as the complex play between genes and environment in shaping personality.

Progress to date

Scientists have a strong foundation for their search for personality genes from the years of basic psychology and neuroscience studies that have explored just exactly what personality is and how personality-related behaviors might be influenced by specific neural mechanisms. And although researchers still debate exactly how to define personality, they have identified certain core personality dimensions that are consistent across cultures, including novelty-seeking, neuroticism and agreeableness.

Intriguing to people has been research in animals and humans that links certain neurotransmitters with some of these dimensions or traits. For example, many studies have found a connection between high levels of the neurotransmitter dopamine and behaviors related to novelty-seeking. That gives researchers a place to start looking—genes related to dopamine—among the nearly 50,000 in the human genome.

To date, there are only two real candidate genes that anyone speaks of with any confidence. The first potential link is between some behaviors related to the Big-Five trait novelty-seeking and a gene that produces the protein responsible for creating a dopamine receptor called DRD4. While some studies have failed to replicate this connection, others have identified a link between the DRD4 gene and other traits linked to novelty-seeking, such as drug abuse and attention-deficit hyperactivity disorder. The indication is that this gene—or perhaps some other gene related to it—may influence all these interrelated characteristics.

The second candidate—linked to the Big Five trait neuroticism—is commonly called the "Prozac" gene because it produces a protein related to the neurotransmitter serotonin. Also known as the serotonin transporter gene or 5-HTTLPR, it has the strongest evidence linking it to neuroticism and other anxiety-related traits, such as harm avoidance.

Even so, the gene appears to account for only about 1 to 2 percent of the variance for these traits, says National Cancer Institute molecular biologist Dean Hamer, PhD, one of the first scientists to search for personality genes. "If that's as good as it gets," he says, "everything else is likely worse." That means perhaps hundreds of genes influence each of our personality traits ever so slightly.

In fact, the work is so difficult from a molecular biology point of view, Hamer is all but abandoning it.

"After 10 years or so, it's quite clear to me that at least for most traits there are a very large number of genes involved," he says. The only area he'll continue working on is sexual orientation. There he feels there's a better chance of finding just a few key genes.

(continued in the other column)

| 考試科目 | 專業英文 | 所 別 | 心理系 | 考 試 時 間 | 5 月 27 日 星期 六 | 第一節 |

I. In according the essay shown above, please (1) outline several key arguments within it, and (2) reply to any of the key arguments you address from the viewpoint of a psychological scientist. All responses have to be in English only. At least 750 words are requested as the minimum for your reply to this essay. (60 %)

II. Given that an academic society or association related to psychology is calling for abstract prior to its annual conference, you have to prepare an abstract in about 1000 words for this submission. The abstract will be covered with any study of your research. However, it is always consisted of the introduction, the methods, the results, and the conclusions. Please write up one abstract in aforementioned format. You may use any set of data you had or any virtual work for this writing test. (40%)

| 考試科目 | 研究方法 | 所別 | 心理系 | 考試時間 | 2月27日 星期六 | 第二節 |

統計：若回答問題時需要查表，請說明查表方式，例如：用 $F_{1, 48: .95}$ 表示：查 F 分配表，$\nu_1=1$，$\nu_2=48$，百分點為 95。請描寫重要計算過程，以方便部份給分。可不計算出最後結果，但最後答案中不得含有文字符號（查表方式符號除外）。

一、(10分)在 $SPF_{3.3}$ 設計中，A 為受試者間變項($J=3$)，B 為受試者內變項($K=3$)，各細格內有 6 個觀察值（$n=6$），細格平均數與 $ANOVA$ 分析如下表：

	B1	B2	B3
A1	9.40	5.72	5.43
A2	2.52	3.23	4.15
A3	7.67	6.75	4.65

SV	df	SS	MS	F
A	2	133.10	66.55	6.11*
S/A	15	163.48	10.90	
B	2	30.57	15.29	11.96**
AXB	4	64.94	16.24	12.70**
BS/A	30	38.35	1.28	

設一個 $A \times B$ 交互作用效果的比較，進行 $Scheff\acute{e}$ 事後比較考驗（$\alpha=.05$）。

二、某研究者想根據 66 名（N）高三學生智力測驗成績（X_1）、創造力測驗成績（X_2）、成就動機成績（X_3）、和高中學業成績（X_4），來預測大學入學考成績（Y）。下列部分報表或資料：

| $r_{Y\cdot 4}^2 = .384$ | $\hat{R}_{Y\cdot 14}^2 = .519$ | $\hat{R}_{Y\cdot 134}^2 = .544$ | $\hat{R}_{Y\cdot 1234}^2 = .546$ |

（A）（10分）請考驗排除高中學業成績（X_4）後，智力測驗成績（X_1）與成就動機成績（X_3）合起來是否造成預測的改變？

（B）（10分）請計算淨相關 $r_{Y3\cdot 14}$。

| 備 考 | 試題隨卷繳交 | 191 |

考試科目	研究方法	所別	心理系	考試時間	七月27日 星期六 第二節

方法:評量重點為觀點與理由的論述

三、(20分) 在檢驗「A→B」因果關係的假說命題時,可考慮統計推論效度、內在效度、建構效度及外在效度四個方向的威脅。請依此四類威脅的區分,分別描述重複驗證(多次獨立實驗)如何消除因果關係論述的威脅?

四、(25分)研究者決定使用干擾時間序列設計(interrupted time-series design),亦即對同一組受試,進行重複測量,來建立實驗處理(T)的效果,試討論在此設計上,可以作那些安排,來消除內在效度的威脅?請說明各種安排可消除何種特定的威脅。

五、(25分)在統計推論效度、內在效度、建構效度及外在效度四類威脅的區分下,進行實驗設計時,選擇某種方式以降低一類效度威脅時,可能增加另一類威脅。面對如此困境時,以你關心(熟悉)的研究領域為例,你如何考量四種效度的優先次序。

備 考	試 題 隨 卷 繳 交	192

申論題：

一、試述「組織發展」與「員工訓練」在概念與實務上有何異同？(25%)

二、試舉出三種非常不同的領導理論論點，並討論把它們應用到人力資源管理上可能產生的不同影響？(25%)

三、試舉出至少三個例子說明「認知心理學」的研究結果如何影響到「工業與組織心理學」的一些研究取向？(25%)

四、企業全球化 (globalization) 會對「組識心理學」與「人事心理學」帶來什麼衝擊？學者應及早研究那些課題？(25%)

考試科目	社會與人格心理學	所別	心理所	考試時間	5月27日 星期六 第三節

1. 請介紹下列期刊所出版論文的性質:(20%)
   《Psychological Review》
   《Journal of Personality and Social Psychology》
   《American Psychologist》
   《中華心理學刊》
   《本土心理學研究》

2. 就心理學的目的而言,共性與殊相是指什麼?台灣的本土心理學者如,黃光國、鄭伯壎、余德慧,與李美枝等人對尋找共性與殊相的觀點有什麼不同?(20%)

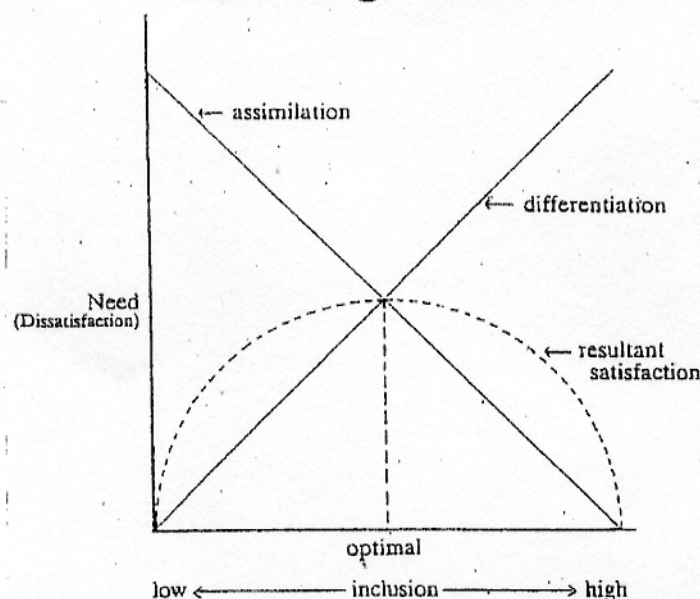3. 關於群際關係的研究與理論,下列學者有什麼樣不同的貢獻:(25%)
   Tajfel H.、Turner, J.C、Brewer, M.B、Crocker, J、李美枝

4. 試根據下列三篇文章或其他相關文章,從文化比較的觀點討論集體主義文化與個體主義文化中家庭型塑小孩自我建構的歷程,及集體主義文化與個體主義文化中其成員自我建構的特色。(25%)
   (1) 下圖取自 M. B. Brewer 的 "The social self: On being the same and difference at the same time".
   (2) C. Kagitcibasi 在 "Development of self and competence in cultural context" 一文中提到 "Two basic human needs for autonomy and interpersonal closeness 及 三種家庭模式"
   (3) Heidi Keller 等人研究了五個國家的親子教養系統 (The Bio-culture of Parenting: Evidence from five cultural communities")』

5. 人格心理學在社會心理學裡扮演怎麼樣的角色?(10%)

194

| 考試科目 | 諮商與臨床心理學 | 所別 | 心理系 | 考試時間 | 5月27日 星期六 第三節 |

一、 諮商與心理治療有許多被廣泛接受的學派與取向,之間有所差異,甚至在某些議題上觀點相互抵觸,因此,當針對特定個案的同一問題時,各個理論取向可能會有不同的解釋與處預方向。然而,就同一個個案的相同問題而言,若這些理論都是「正確」的,則彼此應是相通而非相抵觸的。請問你對這樣的說法有何看法?請你具體說明你對於不同理論的「正確性」以及理論間的異同與取捨的看法。(20%)、

二、 (續上題) 請你以過去接觸過的一個特定個案為例,回答以下問題。

　　(1) 請你描述該個案的背景資料、主訴問題以及重要的相關史(以不透露個案身份並能清楚展現個案的問題為原則)。(15%)

　　(2) 請你舉三至五種理論取向說明以這些理論的觀點如何對該個案的問題形成概念化以及其介入的方法與技巧。(15%)

　　(3) 請你以這個個案為例說明你會如何運用或批判不同理論取向的觀點。(15%)

　　(4) 請你說明心理衡鑑或測驗是否能用來協助你評估與處理這個個案?你會選擇哪些工具或技巧來進行評估?為什麼?(15%)

三、 Tsuang, M. T.等人對於精神分裂症的治療提出了一個新的看法,認為病患發病之後會造成腦部進一步的退化,因此如果在病患發病之後再治療可能效果有限,最好能在發病前就加以治療。他們的研究指出尚未發病的精神分裂症的高危險個案可以以神經心理測驗、負向症狀以及家族史進行篩檢,並稱這些特質為「Schizotaxia」。他們並認為如果可以找出這些個案,在尚未有急性症狀出現之前就施以抗精神病的藥物治療,可以避免後續發病後進一步的損傷與退化。請問你贊同他們的想法嗎?請你就專業倫理的觀點論述這樣的作法需有哪些考量。(20%)

考試科目	發展與教育心理學	所別	心理	考試時間	5月27日 星期六 第三節

1. 研究發展的設計，年齡 ce 較是研究計畫的基礎，請詳述之？又當我們要捕捉發展的歷程（processes），用何種設計較妥，亦請詳述之？25%

2. 維高斯基（L. Vygotsky）的社會文化發展論 認為認知發展發生在社會互動（social interaction）中，因而提出接近發展域（zone of proximal development）的概念，請詳述之？又在教育情境中，如何測量之，以使教學更能促進發展？25%

3. 生長在一個快速轉變的時代，青少年在職業發展上宜考慮未來職業的發展趨勢，根據有關研究，說明職業的發展趨勢？進而說明青少年在個人發展、學校學習上如何準備與因應？25%

4. 許多成人期發展的研究，已對中年期的發展特徵有所了解，請詳述之？你認為中年期是危機 亦是轉機？ 25%